

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Promote
Policy and Program Coordination and
Integration in Electric Utility Resource
Planning.

R.04-04-003
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**OPENING BRIEF OF THE
UNION OF CONCERNED SCIENTISTS
ON UTILITY LONG-TERM PROCUREMENT PLANS**

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FOR: THE UNION OF CONCERNED
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I. INTRODUCTION AND SUMMARY

In accordance with Rule 75 of the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), and as directed in the September 28, 2004 ruling of Administrative Law Judge (“ALJ”) Brown, the Union of Concerned Scientists (“UCS”) submits this opening brief. The ALJ’s ruling provided parties with a standard outline for the brief and asked parties to indicate those areas on the outline that are not applicable to a party or where a party does not wish to advance a position. UCS in this brief addresses only those issues in the outline to which it has an affirmative position at this time. UCS reserves the right in future pleadings to address those issues on which it is not currently taking a position.

The Commission has taken a leadership role in addressing climate change issues. The upcoming decision in this docket presents the Commission with yet another important opportunity to demonstrate its commitment to addressing climate change and adhering to the goals laid out in the *Energy Action Plan*. In order to do this, the Commission should require the utilities to file supplements to their long-term procurement plans in January 2005 that address climate change and related topics. The supplements should model potential cost impacts of carbon regulation, as well as gas price risk, on the resource plans. The utilities should also provide a more detailed annual analysis of renewable resource potential over the next ten years, update renewables-specific procurement plans for 2005 consistent with the renewables portfolio standard (“RPS”) program, adopt a debt equivalency factor for long-term renewable contracts that is lower than for non-renewable contracts, and incorporate the energy efficiency goals adopted by the Commission last month.

II. LONG-TERM PLANS AND THEIR INTEGRATION WITH OTHER PROCEEDINGS: THE COMMISSION SHOULD REQUIRE THE UTILITIES TO FILE SUPPLEMENTS TO THEIR LONG-TERM PLANS IN JANUARY 2005

The Commission should require the utilities to file supplements to their July 2004 long-term procurement plans (“long-term plans”) in January 2005. The supplements should model the impacts of carbon regulation, as well as gas price risk, on the resource plans. The utilities should also provide a more detailed annual analysis of renewable resource potential over the next ten years, update renewables-specific procurement plans for 2005 consistent with the RPS program, adopt a debt equivalency factor for long-term renewable contracts that is lower than for non-renewable contracts, and incorporate the energy efficiency goals adopted by the Commission last month in D.04-09-060. ALJ Brown anticipated that supplements might be required at the August 25, 2004 Prehearing Conference: “It may make sense to ask you to do one update incorporating the direction the Commission has sent you at a later date.”¹ The Commission itself has anticipated the need for supplements to the plans in D.04-09-060, as discussed further below.

A. General Assessment Of The Utilities’ Long-Term Plans And Their Overall Portfolio Strategies: The July Plans Do Not Reflect A “Bottoms Up” Approach, Nor Do They Adequately Mitigate Risk.

A key tool in developing an integrated resource plan is the use of scenario analysis to understand how well a forecast can be expected to fare under significant changes in the input variables. Scenario analysis is a model-driven form of stress testing and has long been used in integrated resource planning. In its longest standing form, scenario analysis begins by taking the forecaster’s base case – the one that reflects the most likely versions of the future – and defining an uncertainty band around the most important input variables. For example, a utility might consider how its resource portfolio would perform if its largest plant were out twice the normal hours per year and gas prices were at the high end of the spectrum, while load was at the high

¹ Reporter’s Transcript (“RT”), 8/25/04, p. 77: 12-14 (ALJ Brown).

end of its likely band. Overall, scenario analysis identifies the probability of a certain outcome and allows a company to plan strategically, financially, and operationally for such an outcome.

The current long-term plans do not include scenario analyses of key variables that are likely to change over the next ten years. In particular, the plans implicitly assume no carbon emission regulation for the next ten years and do not include any scenario analysis of potential additional costs under future carbon regulation. Likewise, a single gas price forecast is used with no sensitivity analyses examining impacts on the plans if gas costs are significantly higher than assumed over the next ten years.² As described in greater detail below, the Commission should require the utilities to update their plans to include a robust scenario analysis of these variables.

B. How The Utilities' Long-Term Plans Reflect Policies, Goals, And Outcomes From Other Umbrella Proceedings: Key Issues That Were (Or Will Be) Decided In The Following Proceedings

A critical issue for the Commission to address is how to integrate the utilities' long-term resource plans and the Commission's decisions on the plans with the RPS (R.04-04-026) and transmission planning (I.00-11-001) dockets.³ The utilities should not be allowed to defer future renewables planning matters to R.04-04-026. In D.04-01-050, the Commission stated it is "feasible and prudent" to analyze renewable procurement in these long-term procurement plans since, renewables "will undoubtedly affect the utilities' need for other procurement products in the future."⁴ In D.04-07-029 the Commission deferred future renewables planning issues to this umbrella proceeding.

Secondly, there is a need for much stronger, coordinated action to plan, permit, and construct transmission that is crucial to the development of new renewables. The Commission

² Exh. 54, p. 9.

³ The need for integration with the RPS and transmission planning proceedings is discussed in more detail in Section III.A of this Opening Brief.

⁴ D.04-01-050, p. 119.

must clearly state that it intends to work with other state and local agencies, as well as local communities and federal entities, to ensure critical transmission infrastructure for renewables is built.

III. LONG-TERM PLANS AND THEIR INTEGRATION WITH OTHER PROCEEDINGS

A. Integrated Generation And Transmission System Planning: Timing, Planning, Flexibility.

1. Transmission Constraints On Renewable Resources Should Be Addressed In The January 2005 Supplements

San Diego Gas & Electric Company (“SDG&E”) Witness Brown testified: “We are, again, asking the Commission to agree that transmission is part of our balanced resource plan and to understand the urgency and the lengthy process that’s needed to license transmission

”⁵ However, SDG&E is the only utility that expressly discussed the linkage between transmission planning and the RPS in its long-term plan. This serious omission by the other utilities must be corrected before the Commission can approve the long-term plans. Given the length of the transmission planning, permitting, and construction process, all of the utilities must immediately address, plan and begin to implement all new transmission needs that will be necessary in order to access renewable resources. Without further directives from the Commission, the utilities are unlikely to achieve or maintain the targets identified in their own long-term plans.

It is undisputed that the utilities’ ability to comply with the RPS of Public Utilities Code section 399.15(b)(1) and their access to the “broadest range” of renewable resources depends on the availability of transmission capacity.⁶ SDG&E testified that responses to its recent RPS solicitation showed 3,300 MW of potential renewable resources outside SDG&E’s transmission

⁵ RT, 8/31/04, p. 253: 2-5 (SDG&E/Brown).

⁶ April 2004 Order Instituting Rulemaking, R.04-04-003 (“OIR”), p. 1.

system.⁷ SDG&E Witness Bartolomucci testified: “. . .my expectation is no, that we could not achieve the 20 percent [renewable portfolio standard] in 2010 without additional transmission. . . .”⁸ SDG&E also acknowledged that it has no specific contingency plans for meeting its legal obligations.⁹ SDG&E’s Witness Brown testified that “[g]iven the length of the permitting process, right-of-way acquisition and construction timing, it is estimated that a minimum of five years is required from the filing of a CPCN until the commercial in-service date.”¹⁰

In Table VI-31 of its long-term plan, Southern California Edison Company (“SCE”) shows that it will maintain a renewables portfolio of 20 percent from 2007 through 2014.¹¹ However, SCE’s long-term resource plan provides almost no specific detail on how SCE intends to meet its RPS requirement or whether transmission upgrades are necessary to do so.¹² In hearings, SCE Witness Arons testified, “[a]nd I believe that it’s going to be likely that substantial transmission will have to be built across the state, not just in the Edison service territory, to interconnect renewable generation.”¹³ Witness Arons stated, “[w]ell we know that we’re going to be, in all likelihood, developing Tehachapi. We have interconnection requests from a number of different wind developers that are at various stages in the interconnection process. Two of them we had referenced total 500 megawatts.”¹⁴

SCE Witness Minick testified the “outcome is uncertain” for SCE’s August 2003 renewables solicitation.¹⁵ SCE has provided no indication that the solicitation will yield any new renewables contracts. While SCE may be in active negotiations with renewable developers, the

⁷ Exh. 6, p. 13.

⁸ RT, 8/30/04, p. 47: 4-17 (SDG&E/Bartolomucci); See also, Exh. 54, p. 25:17-22.

⁹ RT, 8/30/04, p. 86: 16-24 (SDG&E/Resley); p. 410: 17-28, p. 411: 1-18 (SDG&E/Bartolomucci).

¹⁰ Exh. 6, p. 14.

¹¹ Exh. 73, p. 148.

¹² Exh. 73, Appendix B, pp. 158-159; Exh. 62, p. 6.

¹³ RT, 9/15/04, p. 1727: 3-6 (SCE/Arons).

¹⁴ *Id.*, p. 1728-1728: 21-26(SCE/Arons).

¹⁵ Exh. 73, p. 120: 2-3.

publicly perceived lack of progress on the solicitation, paired with the difficulty of developing new transmission to access resource areas such as Tehachapi, casts doubt on SCE's progress toward its 20 percent goal, let alone its ability or willingness to exceed that level. An unfortunate disparity between SCE's procurement of renewables and the potential resource base located within its own service area may exacerbate these concerns. A July 2004 white paper prepared by the California Energy Commission ("CEC") shows 214,288 GWh/year of renewable technical potential, or more than 80 percent of total statewide potential, located in Southern California, excluding SDG&E's service area (i.e., largely within the SCE service area).¹⁶ Indeed, SCE can strengthen its leadership role in encouraging the development of new renewable resources by updating its long-term plan to include more specific and transparent renewable resource data and better integrate transmission planning issues related to accessing new renewable resources.

Center for Energy Efficiency and Renewable Technologies ("CEERT") Witness Ferguson testified that of the three utilities, Pacific Gas & Electric Company ("PG&E") appears to face substantial challenges to meeting the RPS target.¹⁷ While PG&E pledges to "aggressively pursue procurement of renewables," by assuming that all resources will be located on the PG&E transmission grid, the Company has placed a de facto limit on the range of available resources.¹⁸ PG&E acknowledges that new transmission access could facilitate additional renewables, but states only that it "may propose" such projects as part of the 2005 California Integrated System Operator ("CAISO") transmission planning process or in its 2006 Long Term Plan.¹⁹

¹⁶ "Accelerated Renewable Energy Development," p. 41.

¹⁷ Exh. 62, p. 7.

¹⁸ RT, 9/3/04, p. 754:8-10 (PG&E/LaFlash).

¹⁹ Exh. 34, p. 4-52: 3-20.

Each of the utilities' long-term plans must be supplemented to add specific and detailed information on transmission upgrades, not just for the purpose of meeting the minimum RPS requirement, but also to ensure that additional procurement beyond the minimum requirement is a real and viable option.²⁰ PG&E proposes to develop its transmission plans in the CAISO annual proceeding and then integrate these results into the Commission's resource planning proceeding.²¹ The CAISO's grid planning process is a complement to, but not a substitute for, the Commission's oversight of the utilities' procurement responsibilities. The CAISO's focus is on mitigating specific reliability issues, not on meeting RPS requirements or maximizing available renewable resources. As Witness Ferguson testified, the CAISO process:

. . . is the appropriate venue for identifying the details of transmission upgrades. However, the CAISO cannot be expected to do PG&E's renewable energy planning. PG&E's transmission planners are capable of identifying needed transmission capacity for each resource area on which the utility intends to rely, and these needs should be identified now in each of the utilities' long term procurement plans so that the Commission can understand how each utility intends to acquire sufficient renewable energy to meet its RPS goals.²²

The Commission's active oversight of transmission planning in the first instance is absolutely necessary to fulfill the Commission's statutory mandate to ensure compliance with the RPS.²³

It is critical that these 2004 long-term plans contain sufficient information to adequately assess the need for transmission upgrades. SDG&E admits that "time is of the essence," because transmission projects require at least 5 years to license and build, and PG&E agrees that such projects require longer lead times than generation additions.²⁴ The City of San Diego believes 6 years is an "optimistic" assumption for constructing new high-voltage transmission.²⁵ However,

²⁰ Exh. 54, pp. 24-26.

²¹ Exh. 34, p. 4-50.

²² Exh. 62, pp. 7-8.

²³ See, Pub. Util. Code § 399.14(a) and (d).

²⁴ Exh. 34, p. 4-52; Exh. 7, p. 3.

²⁵ Exh. 57, p. 15:1-20; RT, 9/9/04, p. 1185:1-4 (City of San Diego/Monsen).

PG&E states that it “may” propose additional transmission projects for renewables in its 2005 Grid Expansion Plan, which would be considered in the 2006 Integrated Resource Plans.²⁶ PG&E’s approach is inconsistent with the goal of this proceeding: “to adopt long-term resource plans for electric utilities and to continue our ongoing efforts to promote policy and program coordination and integration in electric utility resource planning.”²⁷

Most important, unless the linkage between transmission and generation planning is addressed directly in the resource plans, the utilities run the risk of a future gap in renewables procurement and planning beginning in 2005.²⁸ Even now, absent strong direction from the Commission the utilities’ goals for renewables by 2010 will not be achieved, because of the failure to identify, plan, and build the necessary transmission lines to support such resources. The Commission should refer to the level of detail provided in SDG&E’s long-term plan as a model for the renewable resource data to be included in each of the utilities’ plans.²⁹ UCS agrees with CEERT Witness Ferguson that the Commission must direct SCE and PG&E to supplement their long-term plans to conform to SDG&E’s renewable resource analysis including: (1) assumptions for renewables procurement for the next ten years, (2) development of a resource “stack,” identifying the preferred potential resources, estimated costs and benefits of each, and potential barriers to access, and (3) identification of transmission upgrades that the utility believes will be needed in order to access sufficient renewable energy to meet its RPS goals.³⁰ Only with these analyses can the Commission adequately assess whether the utilities have resource plans that comply with the State’s Energy Action Plan and Public Utilities Code section 399.14.

²⁶ Exh. 34, p. 4-52.

²⁷ OIR, p. 1.

²⁸ Exh. 62, p. 4.

²⁹ Exh. 54, p. 23.

³⁰ Exh. 62, pp. 6-9.

2. The Utilities Should Include The Cost Of Carbon Dioxide Emissions In Their Assessment Of Resource Options.

UCS, NRDC, and PG&E all agree that it is more likely than not that carbon dioxide (“CO₂”) emissions will be regulated within the next decade.³¹ In fact, PG&E has stated that it will incorporate the potential cost of CO₂ emissions in its bid evaluation process for its long-term resource solicitations.³² SDG&E acknowledges that emissions costs could be a “qualitative or quantitative” factor in bid evaluations.³³ Meanwhile, SCE argues that the Commission should ignore this issue because there is insufficient evidence that greenhouse gases impact the climate and there is insufficient evidence on the cost of a CO₂ adder.³⁴ The Commission must reject a “head in the sand” approach and require SCE and SDG&E, like PG&E, to include CO₂ emissions in their bid evaluation processes by imputing a cost of carbon for each MWh of generation.³⁵ The Commission should also direct the utilities to include carbon costs in modeling resource portfolio scenarios in preparing future long-term plans.

One likely result of carbon regulation will be an increase in the marginal cost of fossil fuel generation for CO₂ emissions.³⁶ The Commission has already begun consideration of the cost of “environmental adders” in R.04-04-025, the avoided cost proceeding. The question is not, as SCE asserts,³⁷ whether the Commission will regulate the emissions of CO₂. The real

³¹ RT, 9/7/04, pp. 899:22-27 (PG&E/Pulling); RT, 9/9/04, p. 1173: 5-9 (UCS/Rochelle); RT, 9/9/04, p. 1203: 20-27 (NRDC/Bachrach).

³² Exh. 36, p. 4-9; RT, 9/3/04, p. 775: 11-19 (PG&E/Strauss).

³³ RT, 9/1/04, p. 487:25-28, p. 488:1 (PG&E/Wan).

³⁴ Exh. 78, pp. 52-54. SCE cites to a single article by Energy Secretary Abraham to argue that there is insufficient evidence on climate change. This position must be rejected as lacking any evidentiary basis in the record or in fact. SCE provides no scientific evidence or arguments to support this citation, nor does it acknowledge any of the substantial body of contrary evidence. Indeed, SCE later acknowledges that moving to less carbon intensive technology “makes sense.” In contrast, NRDC – an environmental organization with considerable expertise on the topic – in addition to UCS have provided a coherent review of the scientific literature on global warming and the linkage to greenhouse gases. (Exh. 58, pp. 62-64.)

³⁵ Exh. 54, p. 14:3-14.

³⁶ Exh. 36, pp. 4-10; Exh. 54, pp. 10-12, Exh. 55, pp. 3-5; Exh. 58, pp. 18-21.

³⁷ Exh. 78, pp. 56-57.

question is: how will the utilities manage the risk of increases in the cost of operating or purchasing output from a fossil-fueled plant in their long-term procurement plans?

Carbon risk mitigation is particularly important for coal-fired resources, which emit carbon at a rate significantly higher than natural gas-fired resources.³⁸ Both SDG&E and SCE have indicated that they may consider adding coal-fired resources in the future.³⁹ SCE Witness Minick testified:

...knowing all the coal-fired plants in the southwestern United States, there's seldom much, if any, excess generation from those plants that we could buy. *I'd love to buy them*, but in most cases -- I think Mojave, Salt River Project, Navajo -- they are all pretty much subscribed.⁴⁰ (*emphasis added*)

Additions of coal resources to a utility's portfolio will increase the financial risk exposure of the utility and its customers to costs associated with carbon regulations.

To ignore the financial risk of future carbon regulation would be imprudent from a business perspective. As PG&E testified, a proactive approach to greenhouse gas emissions "will help us to better manage potential costs that may arise from future regulation of green house gas emissions"⁴¹ PG&E Witness Pulling testified that:

We believe that for certain issues that are not compliance issues currently but that may become compliance issues, there may be, by managing proactively, we will be in a better position to address the compliance requirements when they become requirements. We think it is a smart way to do business.⁴²

Even SCE realizes that "the economic impact of making imprudent choices argues for a careful approach."⁴³

Any such approach necessarily includes a long-term forecast of the cost of various resources taking into account the best available information, whether that information concerns

³⁸ Exh. 58, pp. 26-27.

³⁹ Exh. 1, p. 14; Exh. 15, p. 9; RT, 8/31/04, p. 255:5-6 (SDG&E/Brown).

⁴⁰ RT, 9/14/04, p. 1635:17-22 (SCE/Minick).

⁴¹ Exh. 34, pp. 7-4.

⁴² RT, 9/7/04, p. 899:27-28 (PG&E/Pulling); p. 901:1-4 (PG&E/Pulling).

⁴³ Exh. 46, p. 17.

fluctuations in the gas markets, the impact of new regulations on the cost of doing business, or the impact of new regulations on the size of the rate base.⁴⁴ Failure to take into account known economic risks shifts the burden of the risk onto ratepayers and/or the utility shareholders.⁴⁵ Even SCE Witness Hertel acknowledges that a “carbon tax” would be paid by the purchasers of the carbon producing resources.⁴⁶

The time is now for the Commission to demonstrate that it takes the risk of carbon regulation seriously. A critical step would be to require the utilities to take carbon compliance risks into account in the current long-term plans. As NRDC Witness Bachrach testified, the utilities will make investment decisions today that can shape their portfolios for decades to come, and “. . . you can't go back and change the investments that you've made in the past. So what we're suggesting is that, like other risks that the utility manages in the future, that this risk should similarly be managed. . . .”⁴⁷

PG&E Witness Pulling testified that PG&E has data on the cost of carbon emissions from reputable sources that can be used in a bid evaluation.⁴⁸ There is ample evidence in the record for the Commission to determine a range of potential costs that the utilities should assign to CO₂ emissions: the Commission’s consultant’s report in R.04-04-025 used a near term value of \$5/ton, \$12.50/ton beginning in 2008, and \$17.50/ton by 2013; PG&E used \$8/ton based on the present value of the costs set forth in the R.04-04-025 report; UCS Witness Roschelle recommended modeling a range of costs starting at no less than \$8 per ton; NRDC Witness Bachrach recommended a cost of at least \$12/ton beginning in 2008.⁴⁹

⁴⁴ RT, 9/9/04, p. 1206: 14-27 (NRDC/Bachrach).

⁴⁵ Exh. 54, pp. 10-11.

⁴⁶ RT, 9/13/04, p. 1518:21-28, p. 1519:1-3 (SCE/Hertel).

⁴⁷ RT, 9/9/04, p. 1206:14-17 (NRDC/Bachrach).

⁴⁸ RT, 9/7/04, p. 906:17-20 (PG&E/Pulling).

⁴⁹ Exh. 34, p. 5-4; Exh. 54, pp. 15-16; Exh. 58, pp. 22-23.

These costs should be factored into the modeling of resources in subsequent long-term plans and in the bid evaluation process for procurement of resources going forward. PG&E's current long-term solicitation may offer significant guidance on methodology for evaluating carbon emissions. The Commission also should direct PG&E to share with the Commission and other parties the methodology used in PG&E's current long-term solicitation for evaluating bids with respect to carbon emissions. This information may be used by the Commission and parties to further develop and refine the methodology for subsequent long-term plans and bid solicitations.

3. The January 2005 Supplements Should Include Scenarios That Vary Gas Price And Mitigate Gas Price Risks, While Adhering To The State's Policy Priorities For Adding New Resources

The result of any simulation or model of future prices is only as good as the assumptions fed into the model.⁵⁰ In their gas price forecasts, none of the utilities provided enough information about the assumptions to enable the parties to evaluate the results.⁵¹ This omission is significant. As CLECA/CMTA/SVMG Witness Barkovich pointed out, the forecasts of gas prices will have an impact on “which resources are considered cost-effective additions, . . . how they are dispatched, which existing resources can be retired cost-effectively, and, ultimately, on future electric rates.”⁵²

What is known about the utilities' forecasts does not provide much comfort. Each utility used different methodologies and indices, each utility used only a single gas forecast, and the utilities did not clearly or consistently consider portfolio-based risk mitigation strategies for gas price volatility.⁵³ Given the volatility of the gas markets and the importance of the gas price

⁵⁰ Exh. 54, p. 17; see also, Exh. 69, pp. 14-15.

⁵¹ *Id.*

⁵² Exh. 69, p. 10.

⁵³ RT, 09/03/04, p. 773:1-27, (PG&E/Gomez); RT, 8/31/04, p. 318:8-18 (SDG&E/Nguyen); Exh. 54, p. 18.

forecast in the analysis of the relative cost-effectiveness of each type of generation resource, it is imprudent to use a single forecast as the basis for long-term procurement decisions. Moreover, the utilities' approach is inconsistent with the Commission's clear direction in Decision 04-01-050:

Long-term plans should reflect the most recent fuel-price forecasts available at the time of the plans' preparation and *should include fuel-price variation as an element of the plans*. ORA and TURN raise an important issue regarding the use of forecast prices in long-term plans. Fuel prices are notoriously volatile, especially on a short-term basis. They vary with changes in the economy, changes in hydro conditions, changes in drilling and pipeline conditions. They vary for other reasons that are sometimes understandable only in retrospect if at all. We are not convinced that the actual degree of potential variation in fuel costs was reflected in the cost scenarios presented in the long-term plans. Therefore, *we caution the utilities to consider seriously the degree of volatility that should be expected in fuel prices* when developing high percentile scenarios for procurement costs particularly. We direct that future long-term procurement plans should reflect fully the expected range of prices of fuel and costs of purchased power at least up the 95th percentile of the expected distribution.⁵⁴ (emphasis added)

While the utilities examined the range of prices up to the 95th percentile within their chosen fuel price forecast, they did not examine the range of prices between various forecasting methodologies. The Commission should require the utilities to supplement their gas price forecasts using different gas price scenarios and clearly detail the variables and range of values assigned to each variable used in the simulations.

Finally, the Commission should order the utilities to complete the feedback loop and use the results of their analysis to create portfolios that mitigate future gas price risks.

4. Climate Change Issues Must Be Taken Seriously

The Commission has taken great strides in recognizing the importance of climate change and the opportunities that the entities under its jurisdiction offer for helping lessen the devastating impacts of climate change. A recent study reveals that the impacts of climate change

⁵⁴ D.04-01-050, p. 98.

in California are likely to be substantially more severe in a higher greenhouse gas emissions scenario than a lower emissions scenario.⁵⁵ The Commission should issue guidance on greenhouse gas reduction strategies in the near-term (e.g., the decision based on these briefs) and continue to develop a coordinated policy response for achieving emissions reductions. The long-term plans will serve as the foundation for utility resource procurement, representing substantial acquisition and purchase of capacity and energy. The long-term plans should ensure that procurement decisions are guided in part by an accounting of the emissions associated with the procured resources and the financial risks associated with those emissions. Taking this additional step will continue to demonstrate California's leadership in addressing this problem, which will increasingly affect nearly every aspect of our economy and society.

5. SDG&E Should Provide More Detailed Information On Climate Change

One of the steps the Commission has taken to address climate change is the requirement for the utilities to respond in their long-term plans to several questions about climate change.⁵⁶ In their long-term plans, SCE and PG&E provided CO₂ emissions estimates from both purchased power and utility-owned generation.⁵⁷ SDG&E, however, did not provide any quantitative emissions data. SDG&E states it is in the process of quantifying emissions for reporting to the California Climate Action Registry.⁵⁸ The Commission should direct SDG&E to provide this information as soon as possible.

B. Implementing The Energy Action Plan Loading Order: The January 2005 Supplements Should Include A “Bottoms Up” Approach To Energy Efficiency And Renewables, Not A Pre-Ordained “Cap”.

⁵⁵ Exh. 55, p. 3, referencing Hayhoe, K. et al., “Emissions Pathways, Climate Change, and Impacts on California,” Proceedings of the National Academy of Sciences, August 16, 2004. v. 101, no. 34, pp. 12422-12427. <http://www.pnas.org/cgi/reprint/0404500101v1.pdf> (Accessed Aug. 16, 2004).

⁵⁶ Assigned Commissioner's Ruling and Scoping Memo in R.04-04-003, 6/4/04, pp. 3-5, 19-29.

⁵⁷ Exh. 73, p. 42; Exh. 35, pp. 7-6 – 7-9.

⁵⁸ Exh. 29, p. 4.

One of the most important energy policy documents developed in California is the State of California *Energy Action Plan*. The Plan is unique in that it has the endorsement of each of the three key energy agencies in California⁵⁹ and Governor Schwarzenegger, and that it sets forth a clear vision of the energy future that will benefit customers, the economy, and the environment. The Energy Action Plan is very specific about the loading order that utilities should use in developing their long-term plans:

1. Energy efficiency
2. Renewable resources and distributed generation
3. Clean, fossil fuel, central station generation.⁶⁰

The utilities have not demonstrated that they will procure consistently with this loading order, including use of *clean* fossil generation. The long-term plans merely identify the need for conventional generation.⁶¹ While the term “clean” introduces ambiguity into the preferred loading order, UCS believes this term refers to plants with the highest efficiency and lowest possible emissions, using the best-available pollution control technologies. The utilities should indicate that they will adhere to this criteria in contracting for new fossil fuel resources and that their bid solicitations will require data from bidders on plant emissions.

1. The January 2005 Supplements Will Benefit From Inclusion Of Savings From All Cost-Effective Energy Efficiency Programs In Their January 2005 Supplements

While the utilities have included significant energy efficiency savings in their long-term plans, more savings can and should be included in their January 2005 supplements. Anticipated energy efficiency savings will come from three funding sources: (1) energy efficiency programs funded by the public goods charge (“PGC”); (2) ongoing energy efficiency programs for

⁵⁹ California Public Utilities Commission, California Energy Commission, California Power Authority.

⁶⁰ *Energy Action Plan*, p. 4.

⁶¹ Exh. 73, pp. 120-124; Exh. 3, pp. 18-19; Exh. 34, pp. 4-46 to 4-47.

program year 2004-2005 funded by procurement rates; and (3) energy efficiency programs post-2005 funded by procurement rates.

The Commission concurs with the recommendation that long-term plans be updated to include the full range of energy efficiency savings. In Decision 04-09-060, the Commission ordered:

“...our upcoming decisions in R.04-04-003 concerning the long-term procurement plans and 2005/2006 ongoing procurement authorizations of PG&E, SCE and SDG&E shall be made in full recognition of the aggressive energy savings goals we adopt today. For the procurement plans that will be filed in 2006 and during subsequent procurement plan cycles, or for *any updating to the long-term procurement plans required by the Commission* before then, PG&E, SDG&E and SCE shall incorporate the most recently-adopted energy savings goals into those filings.”⁶² (emphasis added)

Clearly the Commission has anticipated that supplements to the long-term plans may be required.

SCE has done the best job of assessing and incorporating energy efficiency into its plan. SDG&E, in contrast, merely included in its 2005 long-term plan the energy efficiency forecast from its 2003 long-term plan.⁶³ And while PG&E assessed the potential for greater savings through energy efficiency, it did not include those savings in its long-term plan.⁶⁴ As the Commission indicated in D.04-09-060, the utilities should include in their resource plans the full energy savings goals established by the Commission. The Commission should direct the utilities to include in the January 2005 supplement energy efficiency projections that are consistent with D.04-09-060.

NRDC's testimony provided the Commission with a checklist of required data that the utilities should be required to provide in updates to their long-term plans. The checklist includes:

⁶² D.04-09-060, September 23, 2004, Ordering Paragraph 6.

⁶³ Exh. 58, p. 42.

⁶⁴ RT, 9/8/04, p. 972:20-28 (ORA/Mobasheri).

- ◆ Total proposed investments in energy efficiency every year over the next decade broken out into the PGC and procurement components (in real and nominal dollars);
- ◆ New annual and cumulative energy savings as a result of the programs every year over the next decade broken out into the PGC and procurement components (in GWh);
- ◆ New annual and cumulative peak savings every year over the next decade broken out into the PGC and procurement components (both coincident-peak and noncoincident-peak, in MW);
- ◆ The total resource cost (“TRC”) net benefits of the proposed investments;
- ◆ The average levelized cost of the energy efficiency resources;
- ◆ Comparison of cumulative energy and peak savings to the Commission’s targets;
- ◆ The projected percent of demand growth reduced by the programs; and
- ◆ The per capita electricity consumption for the service territory over the next decade after factoring in the energy savings from the programs.⁶⁵

UCS concurs with the list proposed by NRDC.

2. Utility Assessments Of Renewable Resources In Current Plans Are Based On Adherence To Renewable Portfolio Standard Targets, Not Actual Potential For Renewable Development

The utility long-term plans are not based on an assessment of the potential for renewable resources in each utility’s service territory. Rather, they are based on an assumption that each utility will procure an additional 1 percent of renewable energy per year, until it reaches the 20 percent target provided by the RPS. For example, PG&E testified “[a]nd so our plan basically was designed around both the 1 percent requirement and the Energy Action Plan’s desire to have 20 percent by 2010.”⁶⁶ SCE similarly testified that it generally views 20 percent as the number around which it is planning in terms of renewables.⁶⁷ Like the problems with energy efficiency, the utilities have not analyzed the cost-effectiveness of renewables on a “bottoms-up” basis nor have they explored the opportunity to exceed the RPS target, which is most appropriately viewed as a floor, not a ceiling, on renewable resources.

⁶⁵ Exh. 58, pp. 51-52.

⁶⁶ RT, 9/3/04, p. 753: 14-16 (PG&E/LaFlash).

⁶⁷ RT, 9/21/04, pp. 2047: 7-13, 2048: 17-21 (SCE/Payne).

While adherence to the Commission's guidelines for RPS compliance is admirable, there is more the utilities can do to increase the amount of renewable resources in their portfolios. SDG&E provides a good model for PG&E and SCE in the level of detail it includes on an annual basis for both existing and new resources. In its confidential workpapers, SDG&E provides thorough estimates of renewable capacity and energy for both existing and new resources.⁶⁸ PG&E provides only rough estimates of new renewables capacity, although it does identify specific technologies. SCE provides estimates of energy production for existing facilities under contract, but does not identify specific technologies and associated estimated quantities for new renewables.⁶⁹

While SDG&E's plan anticipates that renewables will provide 20 percent of power by 2010, in cross-examination SDG&E revealed that it additional transmission capacity must be added to meet the RPS requirement.⁷⁰ The Commission should require SDG&E to perform sensitivity analysis around the likelihood of needed transmission coming online as SDG&E refines its long-term plan. PG&E makes similar assumptions about transmission availability,⁷¹ which should similarly be refined.

Public Utilities Code section 399.14(a) states that the Commission, "shall require" the utilities to update their renewable resource plans as necessary. The Commission should require the utilities to thoroughly integrate detailed assessments of renewable potential into their long-term plans for the supplements to be filed in January 2005. Indeed, in D.04-07-029 the Commission deferred future renewables planning issues to this umbrella proceeding. Yet the

⁶⁸ Exh. 54, pp. 21-22.

⁶⁹ *Id.*

⁷⁰ RT, 9/1/04, p. 409: 4-15 (SDG&E/Bartolomucci).

⁷¹ RT, 9/3/04, p. 754: 19-28; p. 755: 1-3 (PG&E/LaFlash).

utilities have not been ordered to file renewables procurement plans for 2005, pursuant to Public Utilities Code Section 399.14(a).

D.04-07-029 directs the utilities to file those 2005 plans in coordination with this proceeding. The utilities' long-term plans do not show evidence of such coordination, although SDG&E's plan makes steps to comply with the Commission's direction.⁷² The Commission should not defer future renewables planning matters to R.04-04-026 and delay progress toward the 2005 RPS procurement activity. Instead, the Commission should direct utilities, in supplemental long-term plan filings, to update those renewables-specific plans for 2005 as UCS has proposed in its opening testimony.⁷³

On a going-forward basis, the utilities must include renewable resources in any and all future resource solicitations, regardless of whether the utilities have already met the RPS targets. This practice will help to ensure that after implementing the RPS, a utility does not completely fill its remaining need with conventional generation and preclude opportunities to procure renewables beyond 20 percent of the portfolio. The Energy Action Plan does not exempt the utilities from following the preferred loading order after statutory targets have been met.

Both SDG&E⁷⁴ and PG&E⁷⁵ have indicated the possibility of exceeding 20 percent. SCE concedes it "could" exceed 20 percent, but has not indicated a follow-up in its plan.⁷⁶ It will be difficult for the State to develop targets beyond 20 percent if the utilities have already completely filled their long-term need with conventional resources. Governor Schwarzenegger has expressed desire to advance a 33 percent target by 2020.⁷⁷ CEC staff also has recommended

⁷² In addition to providing a robust description of future renewables need, SDG&E also discusses the interface of the long-term plan with its 2004 renewables plan. (Exh. 20, p. 16.)

⁷³ Exh. 54, p. 42.

⁷⁴ Exh. 20, pp. 13-15.

⁷⁵ Exh. 34, p. 4-40.

⁷⁶ Exh. 73, p. 148; RT, 9/21/04, p. 2048: 17-21 (SCE/Payne).

⁷⁷ The Governor's veto message for Senate Bill 1478 states: "Increasing California's commitment to renewable

establishing “more ambitious” RPS goals beyond 2010.⁷⁸ The Commission should direct the utilities to thoroughly discuss the availability of additional renewable resources and, as discussed above, necessary transmission upgrades in their January 2005 supplements. The supplement should also include a specific strategy to ensure that near-term commitments to conventional resources do not preclude acquisition of renewables or energy efficiency.

IV. POLICY ISSUES RELATED TO LONG-TERM PLANS AND HEARINGS

A. Debt Equivalence – Should It Be Recognized For Evaluation Of Power Purchase Agreements?

UCS disagrees with the utilities on two points regarding debt equivalency: 1) how significant the impact is on a company’s financial rating and 2) whether the same debt equivalency factor should be applied to all types of electric power purchase agreements across California.

In D.04-07-029 the Commission directed the utilities to *not* use debt equivalence as a factor in evaluating renewables contracts under the RPS. However, if debt equivalence is a factor in bid evaluations *outside* the RPS context, renewable resources should be included in those solicitations with a lower debt equivalency factor. This discussion of debt equivalence applies to solicitations outside the RPS context.

1. LONG-TERM CONTRACTS DO NOT NECESSARILY LEAD TO LOWER UTILITY CREDIT RATINGS

The utilities argue that long-term power contracts can have a detrimental impact on their credit ratings and that the Commission should authorize the utilities to use a 30 percent debt

electricity is a cornerstone of my administration’s energy and environmental action plans. My action plans outline my goal of accelerating the requirement that 20% of a utility energy portfolio be from renewable sources by 2010 and 33% be from renewable sources by 2020.” (9/25/04)

⁷⁸ "Accelerated Renewable Energy Development," CEC Draft Staff White Paper, Publication 100-04-003, July 30, 2004, p. 36.

equivalency factor for evaluating all long-term contracts, whether conventional or renewable.⁷⁹ Such an approach would effectively limit renewables use because renewable generation requires long-term agreements.

The evidence in the record does not support the utilities' dire predictions of financial distress due to debt equivalency factors of long-term agreements. In recent years, PG&E had an A+ rating from Moody's even though PG&E had long-term contracts in its portfolio, the Commission did not allow price adjustments to bids for debt equivalency, and the credit ratings agencies applied the same ratings criteria that are used today.⁸⁰ History shows that debt equivalency did not cause the utilities' ratings to plummet. In fact, debt equivalency seemed to have no material effect on the A+ credit ratings at all. The Commission should not allow the utilities to use debt equivalency as an excuse to reduce their long-term contracts, which by definition limits renewables use.

2. A Thirty Percent Debt Equivalency Factor For Traditional Generation Contracts Is Too High

Both PG&E and SCE advocate that the Commission adopt the Standard & Poors ("S&P") 30 percent debt equivalency factor for all purchased power contracts.⁸¹ As explained by UCS Witness Roschelle, the three major credit rating agencies take different approaches to assessing debt equivalency, including quantitative and qualitative factors.⁸² The 30 percent debt equivalency factor is just one quantitative measure of debt equivalency and it is not an accurate measure of the impact of long-term contracts on the utilities' credit ratings.

⁷⁹ Exh. 73, p. 27; Exh. 34, pp. 2-31 to 2-32.

⁸⁰ RT, 9/1/04, pp. 507:12-28 to 508:1-12 (PG&E/Campbell).

⁸¹ Exh. 73, p. 25; Exh. 34, pp. 2-25 to 2-26.

⁸² Exh. 54, pp. 36-37.

The utilities have acknowledged that all three major credit rating agencies – S&P, Moody’s and Fitch’s – use qualitative factors in varying degrees to assess debt equivalency.⁸³ For example, Moody’s examines a variety of factors including the terms of the contracts, viability and reliability of the power providers, diversity of power sources, regulatory environment, potential prudence review of power contracts, declining rate base in the absence of new plant, supply availability, and fuel diversity.⁸⁴

Fitch’s primary concern is the likelihood that the utility will be able to recover its generating costs.⁸⁵ PG&E agrees with Fitch that the key factor is the certainty of cost recovery over the life of the contract,⁸⁶ but argues that falling demand raises the possibility of stranded costs.⁸⁷ PG&E does not argue that PG&E is at risk of non-recovery for stranded costs, which is the concern from the credit rating agencies. PG&E has asked the Commission to impose stranded cost recovery on all customers departing bundled utility service for core/non-core, community aggregation, or municipal utilities. Such recovery will mitigate the risk of non-recovery in ways that do not negatively impact PG&E’s balance sheet, and the credit rating agencies will take this factor into account.

Fitch analysts believe that a 30 percent factor is high even for long-term contracts for conventional resources, and a 10 to 20 percent factor is more appropriate.⁸⁸ Using a simple 30 percent factor for debt equivalency ignores the reality of how credit ratings are assessed. The record does not justify such a simple formula. Even S&P states that there is no formula for a ratings opinion; “subjectivity is at the heart of every rating,” and the ratings process “requires a

⁸³ Exh. 73, pp. 21-22; RT, 9/2/04, p. 660: 2-23 (PG&E/Campbell).

⁸⁴ Exh. 54, p. 37.

⁸⁵ *Id.*, p. 38.

⁸⁶ *Id.*, p. 2-4.

⁸⁷ *Id.*

⁸⁸ Exh. 54, p. 40: 3-6, and fn. 49.

broader framework” than a simple financial calculation.⁸⁹ The utilities have given too much weight to S&P’s quantitative methodology. As UCS Witness Roschelle testified, the Commission should consider a lower risk factor in looking at the debt equivalency issue for traditional long-term contracts, in the 10 percent range.

3. Renewables Contracts Should Have A Lower Debt Equivalency Factor Than Traditional Power Contracts

The utilities argue that all long-term power contracts can have a detrimental impact on their credit ratings – due to their riskiness - and that the Commission should authorize the utilities to use a 30 percent debt equivalency factor for long-term contracts, whether conventional or renewables, in calculating the amount of debt on their balance sheet.⁹⁰ The Commission should not regard the risk of renewables and conventional generation contracts in the same light. Evidence presented by UCS shows that the Commission should consider not only the high likelihood that the utilities will recover the costs of renewable contracts, but also the positive hedge factors of long-term renewable contracts relative to traditional generation. These factors include greater fuel diversity, protection against future environmental regulation risks, and protection against fluctuations in the gas markets.⁹¹

PG&E argues in rebuttal testimony that the debt equivalence factor does not disadvantage renewable resources over conventional sources because backers of conventional sources also want long-term contracts.⁹² PG&E states further that UCS confuses a financial issue (contracting versus ownership) with a technology issue (fossil fuel versus renewables).

PG&E mischaracterizes the issue. PG&E and SCE have expressed a preference for short term contracts of three years or less, because the credit rating agencies exclude such contracts

⁸⁹ *Id.*, p. 39: 18-26, quoting S&P 2003 Corporate Ratings Criteria, Nov. 13, 2003, p. 17.

⁹⁰ Exh. 73, p. 27; Exh. 34, p. 2-32.

⁹¹ Exh. 54, p. 39:8-12.

⁹² Exh. 36, p. 2-7.

from their credit rating evaluations; however, Public Utilities Code section 399.14(a)(4) requires renewables contracts to be at least 10 years.⁹³ The Commission recognized the need for longer-term contracts to promote renewables development when it directed the utilities to sign contracts of terms of ten-, fifteen-, and twenty-year terms.⁹⁴ PG&E acknowledges that long-term renewable contracts provide cost certainty and serve as a hedge against rising gas prices, noting that falling gas prices “may be considered low probability.”⁹⁵

PG&E’s rebuttal amounts to this: the credit ratings agencies use “myriad” quantitative and qualitative factors to determine a utility’s credit rating. Even though long-term renewable contracts have a variety of positive hedge factors, the Commission should adopt one of the many factors used by S&P because it is easy.⁹⁶ UCS strongly disagrees that the Commission should take the easy way out on this issue. By recognizing the positive hedge factors of renewable contracts and adopting a lower debt equivalency factor for renewable resources, the Commission will be sending a strong message to the credit ratings agencies about the risks and benefits of renewable contracts. The Commission should adopt a debt equivalency factor for long-term renewable contracts in California that is lower than for non-renewable contracts, at 5 percent of the net present value of capacity payment obligations.

B. Procedures, Rules, And Protocols, Including Independent Third-Party Evaluators: Procedural recommendations for Review of Jan. 2005 Supplements and Future Long-Term Plans.

As set forth in this opening brief and the UCS testimony, the utility long-term plans contain significant gaps that must be addressed before the long-term plans can meet the Commission’s goal of integrated resource planning that provides a “comprehensive context for

⁹³ Exh. 54, p. 29:1-4.

⁹⁴ D.03-06-071, p. 58.

⁹⁵ Exh. 36, p. 2-4:20-23.

⁹⁶ Exh. 36, p. 2-3:13-14.

all of a utility's resource decisions.”⁹⁷ The Commission envisioned that these plans would be more than a straightforward aggregation of resources based on minimum legal requirements; rather the long-term plans should adopt the state's policy preference for maximizing energy efficiency and renewable resources as a primary goal, and identify, address, and manage the full range of financial risks of various resource options. The Commission recognized that this approach would require a paradigm shift for the utilities and encouraged them to “begin designing and creating the internal processes necessary to support this type of analysis.”⁹⁸

This is not business as usual, and the long-term plans must be supplemented to conform to the direction given by this Commission. UCS proposes the following schedule:

- The Commission should require the utilities to file supplements in January 2005.
- The Commission should review the supplements on expedited basis.
- The Commission should adopt a final decision on changes to the plans by May 1, 2005.

In the interim, the Commission should not approve any utility procurement activities for non-energy efficiency or non-renewable resources before first requiring that the utility, at a minimum, include the future value-at-risk due to carbon emissions for any proposed contract in its bid evaluation process.

UCS recommends that the Commission issue clear directions for the January supplements as well as future long-term utility resource plans, including:

- modeling of the impacts of the potential cost of future regulation of CO₂ emissions on the resource portfolio,
- inclusion of a per/ton CO₂ emission cost in bid evaluations,
- an assessment of gas price risk that includes a range of gas price forecasts,
- a detailed analysis of energy efficiency programs and potential on a year by year basis for the next ten years,
- a detailed analysis of renewable resource potential on a year by year basis over the next ten years,

⁹⁷ D.04-01-050, p. 96.

⁹⁸ *Id.*, p. 97.

- a detailed analysis of transmission constraints on renewable resources and proposed upgrades, and
- adoption of a debt equivalency factor for long-term renewable contracts that is lower than for non-renewable contracts.

Finally, the Commission should require that PG&E provide information on how it values carbon emissions in its Fall 2004 solicitation to the Commission and the parties in this proceeding, through a workshop and/or a report.

Additionally, UCS supports the continued role of the procurement review groups (“PRGs”) in providing third-party evaluation of procurement activities to the utilities. The non-market participants of the PRG offer the utilities substantial expertise, insight, and analytical capability in the preparation of bid solicitations, evaluation of offers received, development of a short list, and evaluation of other types of proposed projects (e.g., repowers, bilateral agreements).

V. COMPLIANCE MATTERS

A. Compliance Mechanism For Debt Equivalence And Its Use In The Bid Evaluation/Selection Process.

As earlier discussed, debt equivalence is *not* used as a factor in evaluating renewables contracts under the RPS. However, if debt equivalence is a factor in bid evaluation *outside* the RPS context, renewable resources should be able to compete in those solicitations. To the extent debt equivalence is considered there, the debt equivalency factor for long-term renewable contracts should be consistent with UCS’s recommendation of 5 percent of the net present value of capacity payment obligations.

VI. CONCLUSION

This decision represents the Commission’s return to long-term resource planning, and provides the Commission with an opportunity to provide clear direction on how to implement the loading order outlined in the *Energy Action Plan* and continue its leadership on climate change

issues. The plans should model the impacts of carbon regulation, as well as gas price risk on the resource plans. The Commission should direct the utilities to include a range of costs of CO₂ emissions in their bid analyses, starting at no less than \$8/ton. The utilities should also provide a more detailed annual analysis of renewable resource potential over the next ten years, update renewables-specific procurement plans for 2005 as required under the RPS, adopt a debt equivalency factor for long-term renewable contracts that is lower than for non-renewable contracts, and incorporate the energy efficiency goals adopted by the Commission last month in D.04-09-060. The utilities should file supplements to their plans addresses these issues in January 2005. The Commission should require the utilities to include this same information in future long-term plans.

Respectfully submitted,

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FOR: THE UNION OF CONCERNED
SCIENTISTS

Dated: October 18, 2004

CERTIFICATE OF SERVICE

I, Jack McGowan, certify that I have, on this date, caused the foregoing OPENING BRIEF OF THE UNION OF CONCERNED SCIENTISTS ON LONG-TERM PROCUREMENT PLANS to be served by electronic mail, or for any party for which an electronic mail address has not been provided, by U.S. Mail on the parties listed on the Service List for the proceeding in California Public Utilities Commission Docket No. R.04-04-003.

I declare under penalty of perjury, pursuant to the laws of the State of California, that the foregoing is true and correct.

Executed on October 18, 2004, at San Francisco, California.

Jack McGowan